

**IT IS THE VENDOR'S RESPONSIBILITY TO CHECK  
FOR ADDENDUMS PRIOR TO SUBMITTING PROPOSALS**

## **NOTICE TO BIDDERS SPECIFICATION NO. 06-168**

**The City of Lincoln, Nebraska intends to purchase and invites you to submit a sealed bid for:**

### **Annual Service for Fiber Optic Terminations**

Sealed bids will be received by the City of Lincoln, Nebraska on or before **12:00 noon Wednesday, May 24, 2006** in the office of the Purchasing Agent, Suite 200, K Street Complex, Southwest Wing, 440 South 8th Street, Lincoln, Nebraska 68508. Bids will be publicly opened and read aloud at the K Street Complex.

Bidders should take caution if U.S. mail or mail delivery services are used for the submission of bids. Mailing should be made in sufficient time for bids to arrive in the Purchasing Division, prior to the time and date specified above. Bids may be downloaded from the City's website at [www.lincoln.ne.gov](http://www.lincoln.ne.gov) Keyword: Bid. Prospective bidders must monitor the bid listing for any addendums.

## **Annual Service for Fiber Optic Terminations**

### **1. SCOPE**

- 1.1 It is the City of Lincoln's intent to establish a unit price contract on the items listed in the Bid Items.
  - 1.1.2 All terminations will be in traffic signal cabinets.
  - 1.1.3 All existing fiber has been tested by the contractor who installed it. If existing fiber has found to be damaged this will be dealt with on an individual basis.
- 1.2 The City of Lincoln standard specifications for Municipal Construction shall be the governing authority.
  - 1.2.1 See attached excerpts from this Specification Book for Items Related to Fiber.
- 1.3 Material not covered in this Specification is listed and covered in Section 5 of this document.

### **2. TERMS**

- 2.1 The term of this contract shall be for one (1) year with option for mutually acceptable renewals for two additional one (1) year periods.
- 2.2 Lancaster County, Nebraska; the Public Building Commission; and the City of Lincoln (hereinafter referred to as "Owners"), desire to retain qualified contractors on a Unit Price Construction Contract basis to perform miscellaneous Fiber optic terminations and repair services for the term of the contract.
- 2.3 The attached sample agreement serves as specifications, and describes the obligations of the Owners and the Contractor.
- 2.4 It is anticipated that the total amount of work for all departments/agencies of the Owners for the term of the contracts will depend on breakages and/or new installations.
  - 2.4.1 Individual Unit Price Projects under the terms of this Contract will range from \$0.00 to \$25,000.00.
  - 2.4.2 Individual Unit Price Projects will be bonded separately.
- 2.5 Labor rates being bid shall include all health and welfare benefits, insurance, taxes, overhead, profit, and all other applicable fringe benefits in the total hourly rate shown on the Unit Price Proposal form.
- 2.6 No adjustments in labor rates or overhead & profit percentages being bid will be allowed on work awarded during the annual contract period. Any future fluctuation in the labor market and/or overhead and profit calculations should be taken into consideration by the bidder, even though the work for an individual project may extend into the succeeding year.
- 2.7 The term of the contract shall be one (1) year, July 1, 2006, through June 30, 2007; with options to renew for two (2) additional one-year terms beginning July 1, 2007.

### **3. CONTRACT AND INSURANCE**

- 3.1 Within fourteen (14) calendar days after the award of bid the Contractor(s) must execute a written Unit Price Construction Contract between the Contractor and the Owners, sample attached.
- 3.2 Also, within such time period the Contractor must furnish with the executed agreement a certificate of insurance in accordance with the attached "Insurance Clause to be used for All Unit Price Construction Contracts", naming Lancaster County, the Public Building Commission or the City of Lincoln as additional insured.

### **4. BIDDING PROCEDURE AND AWARD OF CONTRACTS**

- 4.1 Bidding Procedure
  - 4.1.1 Read attached Instructions to Bidders prior to submitting your Unit Price Proposal.
  - 4.1.2 The following documents must be submitted as your bid:
    - 4.1.2.1 Completed and signed Unit Price Proposal Form

4.1.2.2 Copies of applicable Registration Certificate issued by the City of Lincoln.

4.1.2.3 Qualifications statement.

4.1.2.4 List of references.

4.1.2.5 Bid security in the amount of \$1,000.00 is required to be submitted with your bidding documents as a guarantee of good faith.

4.2 Award of Contract

4.2.1 In determining the low responsible bids, consideration may be given to the following factors:

4.2.1.1 Ability, capacity and skill of the bidder to comply with the specifications and perform the work required by the contract.

4.2.1.2 Character, integrity, reputation, judgment, experience and efficiency of the bidder.

4.2.1.3 Ability of the bidder to perform the work within the time specified for each project.

4.2.1.4 Previous and current compliance of the bidder with laws and regulations relating to the work.

4.2.1.5 Quality of the bidder's performance of previous work.

4.2.1.6 Cost of the Unit Price Proposal

4.2.1.7 Any other information deemed relevant to the contract by the Owners.

4.2.2 Contracts resulting from bid proposals shall not be on an all-or-none basis, and may be awarded to several bidders based on price, scheduling, the ability to complete work on time, quality of work and previous inspection and acceptance of past projects.

4.2.3 The Owners further reserve the right to analyze bid proposals in detail and to award contracts which the Owners believe to be in their best interests.

4.2.4 The Owners may make any investigation deemed necessary to determine the ability of a bidder to perform in accordance with the specifications.

4.2.5 The Owners reserve the right to reject any bid based on facts resulting from any investigation which indicates that a bidder is not properly qualified to perform the obligations of any resulting contract.

5. **MATERIALS**

5.1 Wallmount fiber cabinets shall be a Siecor WIC or approved equal.

5.2 Fanout kits shall be Siecor Fan - BT25 or approved equal.

5.3 Breakout panels shall be Siecor with ST feed thru connector.

5.4 All terminations shall be tested and certified to meet industry standards.

6. **WARRANTY**

6.1 All terminations shall be tested and certified to meet industry standards and warranted for one (1) year from acceptance.

**PROPOSAL SPECIFICATION NO. 06-168**  
**BID OPENING TIME: 12:00 NOON**  
**DATE: MAY 24, 2006**

The undersigned, having full knowledge of the requirements of the City of Lincoln for the below listed phases and the contract documents (which include Notice, Instructions, this Proposal, Specifications, Contract, and any and all addenda) and all other conditions of the Proposal, agrees to enter into a contract with the City the below listed fees for the performance of this Specification, complete in every respect, in strict accordance with the contract documents at and for fees listed below.

**ADDENDA RECEIPT:** The receipt of addenda to the specification numbers\_\_\_\_\_through \_\_\_\_\_ are hereby acknowledged. Failure of any submitter to receive any addendum or interpretation of the specifications shall not relieve the submitter from any obligations specified in the request. All addenda shall become part of the final contract document.

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT PRICE</u>
1.	Cost to supply & install Wall Mount Fiber Box with single mode feed thrus           12 F	\$_____
2.	Cost to supply & install Wall Mount Fiber Box with multimode feed thrus           12 F	\$_____
3.	Cost to supply & install Wall Mount Fiber Box with single mode feed thrus           24 F	\$_____
4.	Cost to supply & install Wall Mount Fiber Box with multimode feed thrus           24 F	\$_____
5.	Cost to supply & install Wall Mount Fiber Box with single mode feed thrus           36 F	\$_____
6.	Cost to supply & install Wall Mount Fiber Box with multimode feed thrus           36 F	\$_____
4.	Fan out Kits installed	
4.1	6 F	\$_____
4.2	12 F	\$_____
4.3	18 F	\$_____
4.4	24 F	\$_____
4.5	36 F	\$_____
5.	Supply & Install Single mode fiber ends	\$_____
6.	Supply & Install Multimode fiber ends	\$_____
7.	Fusion Splices; Single Mode	\$_____
8.	Fusion Splices; Multimode	\$_____
9.	Hourly Labor Rate for similar work that may be asked for	\$_____/hour

**\$1000.00 Bid Security required with this bid.**

**TERM PRICE CLAUSE:** Term of agreement is one (1) year from July 1, 2006 through June 30, 2007, with options to renew for two (2) additional one (1) year periods starting on July 1, 2007.

**Bidder must state:**

- (a) Bid prices firm for the full contract period: \_\_\_\_; or
- (b) Bid prices subject to escalation/de-escalation \_\_\_\_.
- (c) If (b), state period for which prices will be firm: through \_\_\_\_\_

**INTER-LOCAL PURCHASING:** The City/County desires to make available to other local government entities of the State of Nebraska, by mutual agreement with the successful bidder, and properly authorized inter-local purchasing agreements, the right to purchase the same services, at the prices quoted, for the period of this contract. Each bidder shall indicated on the Bid Form in the space provided below if he/she will honor Political Subdivision orders in accordance with the contract terms and conditions, in addition to orders from City of Lincoln/Lancaster County.

\_\_\_\_\_ **YES**      \_\_\_\_\_ **NO**

If "YES", Contract supplier or suppliers may honor pricing and extend the contract to political sub-divisions, cities and counties. Terms and conditions of the contract must be met by political sub-divisions, cities and counties. Under no circumstances shall the City of Lincoln/Lancaster County be contractually obligated or liable for any purchases by these political sub-divisions, cities or counties.

**COMPANY REPRESENTATIVE responsible for the administration of this Agreement:**

**NAME:** \_\_\_\_\_  
**TITLE:** \_\_\_\_\_  
**PHONE NO.:** \_\_\_\_\_

**AFFIRMATIVE ACTION PROGRAM:** Successful bidder will be required to comply with the provisions of the City's Affirmative Action Policy (Contract Compliance, Sec. 1.16). The Equal Opportunity Officer will determine compliance or non-compliance upon a complete and substantial review of successful bidder's equal opportunity policies, procedures and practices.

The undersigned signatory for the bidder represents and warrants that he has full and complete authority to submit this proposal to the City, and to enter into a contract if this bid proposal is accepted.

**RETURN 2 COMPLETE COPIES OF PROPOSAL AND SUPPORTING MATERIAL.  
MARK OUTSIDE OF BID ENVELOPE: SEALED BID FOR SPEC. 06-168**

\_\_\_\_\_  
**COMPANY NAME**

\_\_\_\_\_  
**BY (Signature)**

\_\_\_\_\_  
**STREET ADDRESS or P.O. BOX**

\_\_\_\_\_  
**(Print Name)**

\_\_\_\_\_  
**CITY, STATE      ZIP CODE**

\_\_\_\_\_  
**(Title)**

\_\_\_\_\_  
**TELEPHONE No.      FAX No.**

\_\_\_\_\_  
**(Date)**

\_\_\_\_\_  
**E-MAIL ADDRESS**

\_\_\_\_\_  
**ESTIMATED DELIVERY DAYS**

\_\_\_\_\_  
**TERMS OF PAYMENT**

Bids may be inspected in the Purchasing Division during normal business hours **after** tabulation and review by a Purchasing Agent. Bid tabulations can be viewed on our website at: [lincoln.ne.gov](http://lincoln.ne.gov) Keyword: **Bid** The Intent to Award will be listed on the website when a recommendation is received from the Department.

# INSTRUCTIONS TO BIDDERS

## CITY OF LINCOLN, NEBRASKA

### PURCHASING DIVISION

#### **1. BIDDING PROCEDURE**

- 1.1 Bidder shall submit one (1) complete set of the bid documents and all supporting material, unless otherwise stipulated. All appropriate blanks shall be completed. Any interlineation, alteration or erasure on the specification document shall be initialed by the signer of the bid. Bidder shall not change the proposal form nor make additional stipulations on the specification document. Any amplified or qualifying information shall be on the bidder's letterhead and firmly attached to the specification document.
- 1.2 Bid prices shall be submitted on the Proposal Form included in the bid document.
- 1.3 Bidders may submit a bid on an "all or none" or "lump sum" basis, but should also submit a quotation on an item-by-item basis. Bidding documents shall be clearly marked indicating the kind of proposal being submitted.
- 1.4 Any person signing a bid for a firm, corporation, or other organization must show evidence of his authority so to bind such firm, corporation, or organization.
- 1.5 Bids received after the time and date established for receiving bids will be rejected.
- 1.6 If bidding on a Construction Contract, the City of Lincoln's Standard Specifications for Municipal Construction 2006 shall apply.
  - 1.6.1 Bidders may obtain this document from the City's Design Engineering Division of Public Works & Utilities for a small fee.
  - 1.6.2 Said document can be reviewed at Design Engineering or the Purchasing Division.

#### **2. BIDDER'S SECURITY**

- 2.1 Bid security, as a guarantee of good faith, in the form of a certified check, cashier's check, or bidder's bond, may be required to be submitted with this bid document, as indicated on the Proposal Form.
- 2.2 If alternates are requested, only one bid security will be required, provided the bid security is based on the amount of the highest gross bid.
- 2.3 Such bid security will be returned to the unsuccessful bidders when the award of bid is made.
- 2.4 Bid security will be returned to the successful bidder(s) as follows:
  - 2.4.1 For single order bids with specified quantities: upon the delivery of all equipment or merchandise, and upon final acceptance by the City.
  - 2.4.2 For all other contracts: upon approval by the City of the executed contract and bonds.
- 2.5 City shall have the right to retain the bid security of bidders to whom an award is being considered until either:
  - 2.5.1 A contract has been executed and bonds have been furnished.
  - 2.5.2 The specified time has elapsed so that the bids may be withdrawn.
  - 2.5.3 All bids have been rejected.
- 2.6 Bid security will be forfeited to the City as full liquidated damages, but not as a penalty, for any of the following reasons, as pertains to this specification document:
  - 2.6.1 If the bidder fails to deliver the equipment or merchandise in full compliance with the accepted proposal and specifications.
  - 2.6.2 If the bidder fails or refuses to enter into a contract on forms provided by the City, and/or if the bidder fails to provide sufficient bonds or insurance within the time period as established in this specification document.

#### **3. BIDDER'S REPRESENTATION**

- 3.1 Each bidder by signing and submitting a bid, represents that the bidder has read and understands the specification documents, and the bid has been made in accordance therewith.
- 3.2 Each bidder for services further represents that the bidder has examined and is familiar with the local conditions under which the work is to be done and has correlated the observations with the requirements of the bid documents.

#### **4. CLARIFICATION OF SPECIFICATION DOCUMENTS**

- 4.1 Bidders shall promptly notify the Purchasing Agent of any ambiguity, inconsistency or error which they may discover upon examination of the specification documents.

- 4.2 Bidders desiring clarification or interpretation of the specification documents shall make a written request which must reach the Purchasing Agent at least five (5) calendar days prior to the date and time for receipt of bids.
- 4.3 Changes made to the specification documents will be made by written addenda to all known prospective bidders.
- 4.4 Oral interpretations or changes to the Specification Documents made in any other manner, will not be binding on the City; and bidders shall not rely upon such interpretations or changes.

#### **5. ADDENDA**

- 5.1 Addenda are additional documents issued by the City to prospective Bidders prior to the closing date for receipt of bids, which are intended to change or clarify the original plans and/or specifications., i.e. additions, deletions, modifications, or explanations.
- 5.2 Addenda will be mailed or delivered to all who are known by the City to have received a complete set of specification documents.
- 5.3 Copies of addenda will be made available for inspection at the office of the Purchasing Agent.
- 5.4 No addendum will be issued later than forty-eight (48) hours prior to the date and time for receipt of bids, except an addendum withdrawing the invitation to bid, or an addendum which includes postponement of the bid.
- 5.5 Bidders shall ascertain prior to submitting their bid that they have received all addenda issued, and they shall acknowledge receipt of addenda on the proposal form.

#### **6. ANTI-LOBBYING PROVISION**

- 6.1 During the period between the bid advertisement date and the contract award, bidders, including their agents and representatives, shall not lobby or promote their bid with any member of the City Council or City Staff.

#### **7. BRAND NAMES**

- 7.1 Wherever in the specifications or proposal form brand names, manufacturer, trade name, or catalog numbers are specified, it is for the purpose of establishing a grade or quality of material only; and the term "or equal" is deemed to follow.
- 7.2 It is the bidder's responsibility to identify any alternate items offered in the bid, and prove to the satisfaction of the City that said item is equal to, or better than, the product specified.
- 7.3 Bids for alternate items shall be stated in the appropriate brand on the proposal form, or if the proposal form does not contain blanks for alternates, bidder MUST attach to the specification documents on Company letterhead a statement identifying the manufacturer and brand name of each proposed alternate, plus a complete description of the alternate items including illustrations, performance test data and any other information necessary for an evaluation. The bidder must indicate any variances by item number from the specification document no matter how slight. Bidder must fully explain the variances from the specification document, since brochure information may not be sufficient.
- 7.4 If variations are not stated in the proposal, it will be assumed that the item being bid fully complies with the City's specifications.

#### **8. DEMONSTRATIONS/SAMPLES**

- 8.1 Bidders shall demonstrate the exact item(s) proposed within seven (7) calendar days from receipt of such request from the City.
- 8.2 Such demonstration can be at the City delivery location or a surrounding community.
- 8.3 If the bidder is proposing an alternate product, the City may request a sample of the exact item. Samples will be returned at bidder's expense after receipt by the City of acceptable goods. Bidders must indicate how samples are to be returned.

#### **9. DELIVERY (Non-Construction)**

- 9.1 Each bidder shall state on his proposal form the date upon which he can make delivery of all equipment or merchandise. Time required for delivery is hereby made an essential element of the bid.
- 9.2 The City reserves the right to cancel orders, or any part thereof, without obligation, if delivery is not made within the time(s) specified on the proposal form.
- 9.3 All bids shall be based upon **inside** delivery of the equipment/ merchandise F.O.B. the City at the location specified by the City, with all transportation charges paid.

## **10. WARRANTIES, GUARANTEES AND MAINTENANCE**

- 10.1 Copies of the following documents must accompany the bid proposal for all items being bid:
  - 10.1.1 Manufacturer's warranties and/or guarantees.
  - 10.1.2 Bidder's maintenance policies and associated costs.
- 10.2 As a minimum requirement of the City, the bidder will guarantee in writing that any defective components discovered within a one (1) year period after the date of acceptance shall be replaced at no expense to the City. Replacement parts of defective components shall be shipped at no cost to the City. Shipping costs for defective parts required to be returned to the bidder shall be paid by the bidder.

## **11. ACCEPTANCE OF MATERIAL**

- 11.1 All components used in the manufacture or construction of materials, supplies and equipment, and all finished materials, shall be new, the latest make/model, of the best quality, and the highest grade workmanship.
- 11.2 Material delivered under this proposal shall remain the property of the bidder until:
  - 11.2.1 A physical inspection and actual usage of this material is made and found to be acceptable to the City; and
  - 11.2.2 Material is determined to be in full compliance with the specifications and accepted proposal.
- 11.3 In the event the delivered material is found to be defective or does not conform to the specification documents and accepted proposal, then the City reserves the right to cancel the order upon written notice to the bidder and return materials to the bidder at bidder's expense.
- 11.4 Successful bidder shall be required to furnish title to the material, free and clear of all liens and encumbrances, issued in the name of the City of Lincoln, Nebraska, as required by the specification documents or purchase orders.
- 11.5 Selling dealer's advertising decals, stickers or other signs shall not be affixed to equipment. Vehicle mud flaps shall be installed blank side out with no advertisements. Manufacturer's standard production forgings, stampings, nameplates and logos are acceptable.

## **12. BID EVALUATION AND AWARD**

- 12.1 The signed bid proposal shall be considered an offer on the part of the bidder. Such offer shall be deemed accepted upon issuance by the City of purchase orders, contract award notifications, or other contract documents appropriate to the work.
- 12.2 No bid shall be modified or withdrawn for a period of ninety (90) calendar days after the time and date established for receiving bids, and each bidder so agrees in submitting the bid.
- 12.3 In case of a discrepancy between the unit prices and their extensions, the unit prices shall govern.
- 12.4 The bid will be awarded to the lowest responsible, responsive bidder whose proposal will be most advantageous to the City, and as the City deems will best serve its requirements.
- 12.5 The City reserves the right to accept or reject any or all bids; to request rebids; to award bids item-by-item, with or without alternates, by groups, or "lump sum"; to waive minor irregularities in bids; such as shall best serve the requirements and interests of the City.
- 12.6 In order to determine if the Bidder has the experience, qualifications, resources and necessary attributes to provide the quality workmanship, materials and management required by the plans and specifications, the Bidder may be required to complete and submit additional information as deemed necessary by the City. Failure to provide the information requested to make this determination may be grounds for a declaration of non-responsive with respect to the Bidder.
- 12.7 The City reserves the right to reject irregular bids that contain unauthorized additions, conditions, alternate bids, or irregularities that make the Bid Proposal incomplete, indefinite or ambiguous.

## **13. INDEMNIFICATION**

- 13.1 The bidder shall indemnify and save harmless the City of Lincoln, Nebraska from and against all losses, claims, damages, and expenses, including, attorney's fees arising out of or resulting from the performance of the contract that results in bodily injury, sickness, disease, death, or to injury to or destruction of tangible property, including the loss of use resulting therefrom and is caused in whole or in part by the Bidder, any subcontractor, any directly

or indirectly employed by any of them or anyone for whose acts any of them may be liable. This section will not require the Bidder to indemnify or hold harmless the City of Lincoln for any losses, claims damages, and expenses arising out of or resulting from the sole negligence of the City of Lincoln, Nebraska.

- 13.2 In any and all claims against the City or any of its members, officers or employees by an employee of the bidder, any subcontractor, anyone directly or indirectly employed by any of them or by anyone for whose acts made by any of them may be liable, the indemnification obligation under paragraph 13.1 shall not be limited in any way by any limitation of the amount or type of damages, compensation or benefits payable by or for the bidder or any subcontractor under worker's or workmen's compensation acts, disability benefit acts or other employee benefit acts.

## **14. TERMS OF PAYMENT**

- 14.1 Unless stated otherwise, the City will begin processing payment within thirty (30) calendar days after all labor has been performed and all equipment or other merchandise has been delivered, and all such labor and equipment and other materials have met all contract specifications.

## **15. LAWS**

- 15.1 The Laws of the State of Nebraska shall govern the rights, obligations, and remedies of the Parties under this proposal and any agreement reached as a result of this process.
- 15.2 Bidder agrees to abide by all applicable State and Federal laws and regulations concerning the handling and disclosure of private and confidential information concerning individuals and corporations as to inventions, copyrights, patents and patent rights.

## **16. AFFIRMATIVE ACTION**

- 16.1 The City of Lincoln-Lancaster County Purchasing Division provides equal opportunity for all bidders and encourages minority businesses and women's business enterprises to participate in our bidding process.

## **17. LIVING WAGE**

- 17.1 The bidders agree to pay all employees employed in the performance of this contract, a base wage of not less than the City Living Wage per section 2.81.010 of the Lincoln Municipal Code. This wage is subject to change every July.

## **18. EXECUTION OF AGREEMENT**

- 18.1 Depending on the type of service provided, one of the following three (3) methods will be employed. The method applicable to this contract will be checked below:
  - ☐ a. This Contract shall consist of a **PURCHASE ORDER** and a copy of the suppliers signed bid (or referenced bid number) attached and that the same, in all particulars, becomes the agreement and contract between the parties hereto: that both parties thereby accept and agree to the terms and conditions of said bid documents, and that the parties are bound thereby and the compensation to be paid the Supplier is as set forth in the Supplier's Bid. Items not awarded, if any, have been deleted.
  - ☒ b. The contract shall consist of a **YEARLY AGREEMENT** and a copy of the suppliers signed bid attached and that the same, in all particulars, becomes the agreement and contract between the parties hereto. That both parties thereby accept and agree to the terms and conditions of said bid documents, and that the parties are bound thereby and the compensation to be paid the Supplier is as set forth in the Suppliers' Bid. Items not awarded, if any, have been deleted.
  - ☐ c. Three (3) copies of the **CONTRACT**, unless otherwise noted.
    - 1. City will furnish three (3) copies of the Contract to the successful Bidder who shall prepare attachments as required. Insurance as evidenced by a Certificate of Insurance, surety bonds properly executed, and Agreement signed with the date of signature shall be attached.
    - 2. The prepared documents shall be delivered to the City within 10days (unless otherwise noted).
    - 3. The City will sign the Contract Agreement, insert the date of signature at the beginning of the Contract Agreement, prepare an Executive Order to go the Mayor for signature.
    - 4. Upon approval and signature from the Mayor, the City will return one copy to the Contractor.

# **SPECIAL PROVISIONS FOR COMMODITY TERM CONTRACTS**

## **CITY OF LINCOLN, NEBRASKA PURCHASING DIVISION**

### **1. ESTIMATED QUANTITIES**

- 1.1 The quantities set forth in the specification document are approximate and represent the estimated requirements of the City for the contract period.
- 1.2 Items listed may or may not be inclusive of City requirements for this category.
- 1.3 Category items not listed, but distributed by bidder are to be referred to as kindred items. Kindred items shall receive the same percentage of discount or pricing structure as items listed in the specification document.
- 1.4 The unit prices and the extended total prices shall be used only as a basis for the evaluation of bids. The actual quantity of materials necessary may be more or less than the estimates listed in the specification document, but the City shall be neither obligated nor limited to any specified amount. The City will, if possible, restrict increases/decreases to 20% of the estimated quantities listed in the specification document.

### **2. CONTRACT PERIOD**

- 2.1 The material shall be delivered as ordered during the contract period, beginning from the date of contract and ending one (1) year from that date, or as otherwise indicated on the proposal form.
- 2.2 The City is interested in a one (1) year contract, with the option to renew for no more than **two** (2) additional one (1) year renewals. Bidder must indicate on the proposal form if extension renewals are an option. By mutual consent of both parties it is understood and agreed that the contract may be renewed only at the same prices and/or under the same conditions governing the original contract; and any request for an increase in price or a change in the contract conditions shall be interpreted as a request not to renew the contract at the end of the current contract period.

### **3. BID PRICES**

- 3.1 Bidders must state on the proposal form if the bid prices will remain firm for the full contract period; or if the bid prices will be subject to escalation/de-escalation.
- 3.2 **Escalation/De-escalation Clause:** In the event that prevailing market conditions warrant an adjustment in bid prices contained in the contract, the following escalation/de-escalation clause shall be the only clause applicable or acceptable to the City:
  1. Contractor shall give written notice to the Purchasing Agent of any proposed changes from contract prices not less than thirty (30) calendar days prior to the effective date of said price changes.
  2. Such notice must be accompanied by a certified copy of the supplier's advisory or notification to the contractor of price changes.
  3. No price escalation will be authorized in excess of the amount of the increase referred to on the supplier's notice.
  4. The approved price change shall be honored for all orders received by the contractor after the effective date of such price change.
  5. Approved price changes are not applicable to orders already issued and in process at time of price change.
  6. The City reserves the right to audit and/or examine any pertinent books, documents, papers, records or invoices relating directly to the contract transaction in question after reasonable notice and during normal business hours.

7. The Purchasing Agent retains the right to determine whether or not such proposed price changes are in the best interests of the City.
8. If in the opinion of the Purchasing Agent any proposed increase is found unacceptable, the Purchasing Agent reserves the right to cancel the contract upon thirty (30) calendar days written notice.
9. Contractors must tie any price change clause to an industry-wide or otherwise nationally recognized index, or some other form of verifiable document. Contractor will put the Purchasing Agent on the mailing lists for such publication so that the Purchasing Agent can monitor said changes. Such membership will be at no cost to the City.

### **4. CONTRACT AWARD NOTIFICATION**

- 4.1 The Purchasing Division will issue a Contract Award Notification to all successful bidders. Such contract award notification will incorporate the City's specifications, and may incorporate the bidder's specifications.
- 4.2 No action need be taken by the contractors at time of receipt of such Contract Award Notification.
- 4.3 Orders for materials will be made as needed by the various City Departments.

### **5. QUARTERLY REPORT**

- 5.1 The contractor shall provide to the Purchasing Agent a quarterly report, showing all purchases made under the terms and conditions of the contract.
- 5.2 Such quarterly report shall itemize the following information:
  1. Each ordering department.
  2. Items and quantities purchased by department.
  3. Total dollar amount of purchases by department

### **6. TERMINATION OF CONTRACT**

- 6.1 This contract may be terminated by either party upon thirty (30) days prior notice in writing to the other party. The Owner may terminate this contract immediately, under breach of contract, if the Contractor fails to perform in accordance with the terms and conditions. In the event of any termination of contract by the Contractor, the Owner may purchase such supplies and/or services similar to those so terminated, and for the duration of the contract period the Contractor will be liable for all costs in excess of the established contract pricing.

## 24.11 CABLE (Continued)

### A. TYPES AND CLASSES OF CABLE (Continued)

#### 6. Fiber Optic Cable

All fiber optic cable shall be new, unused and of current design and manufacture. All fibers in the cable shall be useable fibers and meet the following criteria. Fiber optic cables shall be of the exact number of fibers and type called for on the plans or in the special provisions.

##### Multi-mode fiber:

Core diameter	62.5 +/- 3.0 $\mu$ m
Cladding diameter	125.0 +/- 2.0 $\mu$ m
Core to cladding offset	<3.0 $\mu$ m
Coating diameter	250 +/- 15 Graded index $\mu$ m

##### Single-mode fiber:

Typical core diameter	8.3 $\mu$ m
Cladding diameter	125 +/- 1 $\mu$ m by fiber end measurement
Core-to-cladding offset	<1.0 $\mu$ m
Coating diameter	250 +/- 15 $\mu$ m
Attenuation uniformity	No point discontinuity greater than 0.1 dB at either 1310 nm or 1550 nm frequencies. The coating shall be a dual layered UV acrylate applied by the fiber manufacturer. The coating shall be mechanically or chemically removable without damaging the fiber.

#### a. Fiber specification parameters

The attenuation Specification shall be the maximum attenuation for each fiber over the entire operating range of the cable. The change in attenuation at extreme operational temperatures for single-mode fibers shall not be greater than 0.20 dB/km at a wave length of 1550 nm, with 80% of the measured values no greater than 0.1 dB/km at a wave length of 1550 nm.

#### b. Cable physical properties - Loose Tube

Optical fibers shall be placed inside a loose buffer tube. Each tube shall contain six fibers of the same type. Buffer tubes shall meet EIA/TIA-598, "color coding of fiber optic cables." Single-mode fibers are to be placed in Buffer #1 (Blue), Buffer #2 (Orange), and Buffer #3 (Green) where composite fiber cable is specified. Multi-mode fibers shall start with Buffer #4 (Brown). Buffer tubes shall be stranded around a central member using the reverse oscillation, or "SC" stranding process.

Each buffer tube shall be filled with a non-hygroscopic, non-nutritive to fungus, electrically non-conductive, homogeneous gel. The gel shall be free from dirt and foreign matter. The gel shall be readily removable with conventional nontoxic solvents.

To prevent buckling of the cable, a central anti-buckling member shall be included in the cable consisting of a glass reinforced plastic rod. Fillers may be added to the cable core to lend symmetry to the cable cross-section where needed. The cable core interstices shall be filled with a water-blocking gel as specified above.

## 24.11 CABLE (Continued)

### A. TYPES AND CLASSES OF CABLE (Continued)

All dielectric cables with no armoring shall be sheathed with medium density polyethylene. The minimum nominal jacket thickness shall be 55 mils.

Jacketing material shall be applied directly over the tensile strength members and gel compound.

#### b. Cable physical properties - Loose Tube (Continued)

The jacket or sheath shall be marked with the manufacturer's name, the words "Optical Cable", the year of manufacture, and sequential feet marks. The markings shall be repeated every segment. The actual length of the cable shall be within 0 to +1% of the length marking. The marking shall be in a contrasting color to the cable jacket or sheath. The height of the marking shall be approximately 0.1 inches.

#### c. Cable Physical Properties - Tight Buffer

Tight buffer may be used if approved by Engineer.

Tight Buffer fiber shall be Optical Cable Corporation, Aerial DX-Series polyethylene distribution cable or approved equal with the appropriate fiber count.

#### d. Quality assurance provisions

All optical fibers shall be proof tested by the manufacturer at a minimum load of 50,000 psi and 100% attenuation tested. The attenuation of each fiber shall be certified with each cable reel.

#### 7. Tracer Wire

Tracer wire shall be #14 AWG THHN, green in color.

#### 8. Coaxial Cable

Coaxial cable shall be RG 6 Coaxial Cable.

#### 9. Camera Detector Cable

Camera Detector Cable shall be a 5 conductor and RG 59 combination in a single jacket.

The first element consists of 5 conductors each of No. 18 AWG 7/26 copper strand encased in .016 inch thickness of polyethylene, the color code shall be white, red, blue, black, and brown. The second element shall be a RG 59 single conductor, No. 20 AWG solid copper, surrounded by .056 inch foam polyethylene with a 95% bare copper braid encased in a .035 inch black polyethylene. This element shall have an outside diameter of .242 inches.

The overall assembly is housed in a UV stabilized black polyethylene jacket of .030 in thickness.

#### 10. Emergency Detector Cable

Emergency Detector Cable shall be a shielded 3/c with bare ground. The conductors shall be 20 AWG 7/25 BC 600Vac uninsulated. The colors shall be blue, orange, and yellow. The ground shall be 20 AWG 7/26 BC insulated. The outside jacket shall be PVC, black in color, sunlight resistant, and have a total nominal outside diameter of 0.51 inches.

## A. TYPES AND CLASSES OF CABLE (Continued)

## 11. Camera Control Cable

Camera Control Cable shall be Type CMX Outdoor - CM 24 AWG CAT5E.

## 12. Camera Power Cable

Camera Power Cable shall be IMSA Specification No. 19-1, No. 12 AWG to 250 feet or No. 14 AWG to 150 feet, 4/c.

## B. INSTALLATION

The installation of power and communications cable shall, in general, conform to the National Electric Safety Code insofar as it applies, subject to the conditions and instruction of the Engineer.

No splices or joints will be permitted to be drawn inside the conduit, nor shall any splices or joints be made in any cable outside of pull boxes, pole bases or traffic signal heads.

No splices are allowed in any cable except Street Lighting Cable and Circuit Grounding Cable; these cables shall be spliced only when a change in size or split of cables is shown on the plan. Tracer wire may be heat shrink spliced in a pull box.

## 1. Underground Cable

Prior to installation of underground cable, the Contractor shall insure that the conduit is open, continuous, free of water, and clear of debris.

The cable shall be installed in such a manner and by such methods ensuring against harmful stretching of the conductor, injury to the insulation, or damage to the outer protective covering of the cable. An approved cable lubricant may be used to aid in pulling through conduit, when necessary.

Where more than 1 cable is to be installed in the conduit, all shall be pulled at the same time. 2 feet of extra cable shall be left on each lead extending beyond the hand hole in the base of all poles, above the top of all pull boxes, power pedestals, and each side of any splice. 6 feet of extra cable shall be left in the cabinet.

Cables shall be identified by several wraps of colored tape at all access points. Colored tape shall be 3M No 35 or approved equivalent. Color code as follows:

Circuit Ground Cable: Green

Traffic Service Cable:

Neutral AC-	Yellow White
AC+	Yellow Blue

Street Light Cable:

Neutral AC-	Red White
AC+ Phase 1	Red Blue
AC+ Phase 2	Red Blue Blue
AC+ Phase 3	Red Blue Blue Blue

Festoon Cable:

Neutral AC-	Violet White
AC+ Phase 1	Violet Blue
AC+ Phase 2	Violet Blue Blue
AC+ Phase 3	Violet Blue Blue Blue

## 24.11 CABLE (Continued)

### B. INSTALLATION (Continued)

#### Metered Cable:

Neutral AC-	Orange White
AC+ Phase 1	Orange Blue
AC+ Phase 2	Orange Blue Blue
AC+ Phase 3	Orange Blue Blue Blue

#### 6. Fiber Optic Cable - Continued

All other cables shall be identified with SWD-Write-On Tape 054007-11954 3M Electrical or approved equivalent.

Detector Lead-In cables shall be identified with phase and amplifier designation, both in the cabinet and the pull box where the detector is spliced. Traffic signal cables, push button cables, coaxial cables, camera control cables, camera detector cables, camera power cables, emergency detector cables shall be identified in the cabinet with the corresponding pole number. Communication cable shall be identified in the cabinet with the direction of cable from the cabinet.

#### 2. Overhead Cable

The installation of cable shall utilize good line installation practice whereby the cable is pulled in from dead-end to dead-end. Where the overhead cable cannot be connected to the controller terminal or junction box, the Contractor, at their expense, shall provide a temporary dead-end to prevent slacking off of the existing facilities.

All communication and fiber optic cables shall be armored.

Where new cables are installed on an existing pole line, the sag of the new cable shall be the same as existing lines. Clearances shall as a minimum be those of Section 23 National Electric Safety Code, unless a more restrictive position is part of the project plan or "Lincoln Standard Plans." Any deviation from this will require approval of the Engineer prior to final attachment.

A pulling eye and swivel shall be used to eliminate twisting of the cable.

Drip loops shall be provided at all signal hangers, wire inlets, and service entrance heads in conformance with good outdoor wiring methods.

Communication cable and traffic signal cables to isolated lamps shall be identified at each pole attachment by wrapping yellow vinyl plastic electrical tape at least 12 inches on both sides of the attachment using ½ width overlap. The tape shall be permanent and non-fading.

When any portion of the communication cable is installed overhead the following applies:

- a. In the communication space, as approved by LES and Telephone, with 40 inches of dead space to the secondary, the communication cable can occupy the riser if the spacing for cables in the run and drip loops is maintained.
- b. Without the required minimum space the communication cable shall be installed in a dedicated conduit/riser between the weather-head and the in-ground structure or the pole-mounted traffic control cabinet.
- c. All non-communication cables crossing the "communication space" on the structure shall be enclosed in a conduit from the secondary space to the in-ground structure or the pole-mounted traffic control cabinet.

B. INSTALLATION (Continued)

- d. The messenger supporting the communication cable shall be bonded to the existing ground systems or new grounds installed. This ground shall be required for all multi-span installations and at intervals not to exceed 1,000 feet.
- e. Where the communications cable is to be installed overhead and on poles that are within areas of tree lined boulevards, the Contractor shall:
  1. Install a "Pulling-In" line, conforming to the aforementioned sag and attachment.
  2. Request the City Arborist to inspect the anticipated tree trimming.
  3. Employ the services of a licensed arborist to perform the necessary trimming.

Under no circumstances will trimming of limbs be permitted unless it conforms to the above conditions.

3. Fiber Optic Cable

All fiber optic cable shall be installed in ducts or conduits unless specifically called for otherwise in the Special Provisions. A suitable cable feeding method shall be used between the cable reel and the face of the duct and conduit to protect the cable and guide it into the duct. If pulled by mechanical methods, dynamometers or break away pulling swings shall be used to ensure that the pulling line tension does not exceed 600 pounds. The Engineer must be notified prior to installing cable by mechanical methods. The mechanical stress placed on a cable during installation shall not be such that the cable is twisted or stretched. A pulling eye and swivel shall be attached to the cable and used to pull the cable through the duct and conduit system to prevent the cable from twisting. Cables shall not be forced around sharp corners and precautions shall be taken during installation to prevent the cable from being kinked or crushed. Pulling of the cable shall be hand assisted at each controller cabinet.

As the cable is fed into the duct and conduit system, it shall be lubricated with a water based lubricant approved by the cable manufacturer. The cable shall be carefully inspected for jacket defects. If defects are noticed, the pulling operation shall be stopped immediately and the Engineer notified. The Engineer shall make a determination of acceptability or shall reject the cable.

Sufficient slack shall be left at each end of the cable and tracer wire to allow proper cable termination. Additional slack cable shall be left in each controller cabinet, hand hole, at the top of each conduit riser and at each wood support pole.

The minimum slack amounts shall be as follows:

Controller cabinet pull box - 20 feet  
Pull box - 10 feet  
Deep or Stacked pull box - 15 feet  
Conduit riser - 50 feet

Storage of additional slack cable in controller cabinets and pull boxes shall be coiled. The slack coils shall be bound at a minimum of 3 points around the coil perimeter and supported in their static positions. Storage of additional slack cable adjacent to conduit risers and support poles shall be as detailed on the plans.

Minimum bending radius shall be not less than that recommended by the manufacturer.

## B. INSTALLATION (Continued)

The fiber cable shall be installed in continuous runs between cabinets or as marked on the plans. No splices shall be allowed outside the controller cabinets. When splices are authorized in the Special Provisions, only fusion splices shall be allowed.

Terminations shall be made using the method recommended by the connector manufacturer. The termination of each fiber at the end-point device shall be by the Contractor.

## a. Fiber Termination

All materials shall be temperature rated for -40 C to 80 C or better. The multimode cables shall use ST style connectors. These connectors shall have mated pair insertion loss less than 0.60 dB (0.25 dB typical). They shall have a thermal cycling performance as follows: the change in dB shall be less than or equal to 0.20 dB at -40 C to 80 C. The connectors shall have mating durability less than or equal to 0.25 dB and shall have UL-VO flammability rating. They shall be compliant with ANSI/TIA-568-B.3 and shall fit a panel cut out double-D cut out diameter 0.38 inches. The boot color shall be black.

The single mode cables shall use SC style connectors. They shall have a mated pair insertion loss less than 0.60 dB (0.25 dB typical). The connectors shall have a thermal cycling performance as follows: the change in dB shall be less than or equal to 0.20 dB at -40 C to 80 C. They shall have a mating durability less than or equal to 0.25 dB and shall have a UL-VO flammability rating. The connectors shall be compliant with ANSI/TIA-568-B.3 and shall fit a panel cut out of 1.024 inches by 0.375 inches. The boot color shall be yellow.

The breakout panels shall be either wall mount or rack mount and shall be of a metal construction. They shall have a door on the installer side. The cable entry ports shall be aligned on the top and bottom to allow stackable mounting. The break out panels shall be equipped with the proper number and style of feed through needed at the installed location. They shall be equipped with all hardware necessary to route the fibers and secure cables. It shall insure fiber bend radius protection.

All splices shall be fusion. The fusion splices shall meet or exceed industry standards. They shall have fusion splice protection sleeves. The splices shall be installed in splice trays. The trays shall be stackable. All trays shall be housed in either a wall mount or rack mount cabinet, which shall be metal. Cable entry ports shall be aligned on top and bottom to allow stackable mounting. They shall be equipped with all hardware necessary to route the fibers and secure cables. It shall insure fiber bend radius protection.

## b. OTDR Testing

An Optical Time Domain Reflectometer (OTDR) shall be used to evaluate the quality and length of cable reels prior to their use on the project. The fiber loss in dB/Km and the length of each reel shall be recorded in the documentation. The maximum attenuation of the cable shall be 3.5 dB/km nominal, measured at room temperature at a wave length of 850 nm. The OTDR shall be rated at 850 nm, 1310 nm, and 1550 nm light wavelengths.

A hard copy of OTDR signature traces for all system links shall be made and provided in the documentation.

LED light source(s) with the wavelengths that are part of the system wavelength shall be used. The LED shall be stable within 0.1 dB in intensity over a time period sufficiently long to perform the measurement. The output of the LED shall overfill the input end of the launch fiber/cable in both numerical aperture (NA) and core diameter. Light source(s) shall be provided for 850 nm, 1300 nm, 1310 nm, and 1550 nm wavelengths.

## 24.11 CABLE (Continued)

### B. INSTALLATION (Continued)

The detector in the power meter shall have an effective numerical aperture and active region that is larger than the receive reference cable and/or the fiber under test. The power meter shall have a minimum range from +3 dB to -40 dBm. The power meter shall have an accuracy of +/- 0.5 dB through the operating temperature and minimum resolution of 0.1 dB. The power meter shall properly read wavelengths of 850 nm, 1300 nm, 1310 nm and 1550 nm.

The launch cable shall provide the attachment of the power meter. The receive cable fiber shall be of the same fiber core size as the fiber under test.

#### c. Attenuation Documentation

The end to end attenuation shall be measured for each link after installation by insertion loss testing.

The launch reference cable shall be connected to the light source and the receive reference cable to the power meter. The two reference cables shall then be connected via a patch panel. A reference power reading (P1) shall then be taken and recorded.

The system link to be tested shall then be inserted between the launch and receive reference cables using 2 patch panels. A test power reading (P2) shall then be taken and recorded.

The link attenuation (A) in decibels (dB) shall be calculated and recorded as the mathematical difference between the reference power (P1) reading and the test power (P2) reading:

$A = P1 - P2$  where:

P1 = reference power reading, and

P2 = test power reading

This test shall be performed in both directions along the link. The direction of the test shall also be recorded in the documentation.

### C. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The quantity of electrical cables and/or conductors to be paid for shall be the number of feet of such material of the size and type required, installed and accepted by the Engineer, as measured from center to center of foundations or pull boxes, or from pole to pole if there is no foundation.

Cable inside foundations, poles, pull boxes, cabinets, and other such devices or structures shall be subsidiary to those items and will not be measured for payment.

No measurement or direct payment shall be made for loop wire or pole wire, but shall be considered part of the vehicle detector and pole items, respectively.

Electrical cable, communication cable and/or conductors shall be paid for at the contract unit price bid per linear foot for the items. These prices shall be full compensation for all excavation required for backfilling and compaction; and for all labor, equipment, tools, materials, and incidentals required to complete the work.

Fiber optic cable shall be measured and paid for at the Contract unit price bid per linear foot for the type, size, and number of fibers specified. Such price shall be full compensation for furnishing and installing fiber optical cable, all necessary slack, testing, documentation, termination, and all other materials, hardware, labor, equipment, tools, and incidentals necessary to complete the work.

## 24.12 CABLE SPLICES AND CONNECTIONS

### A. GENERAL

All Traffic Signal splices and Street light splices below grade shall be made for continuous immersion in water.

Cable connections in signal heads or controller cabinets shall be made at the terminal boards provided for this purpose. All stranded wires inserted under a binder head screw shall be equipped with a solderless pressure-type spade connector with a pre-insulated shank. No bare wire shall be exposed.

Service connections to the Traffic Signal Control Cabinet shall be continuous from the power source.

### B. TWISTED PAIR COMMUNICATIONS CABLE SPLICES

All splicing of Twisted Pair Communication Cable shall be by City personnel.

### C. CABLE SPLICES AND CONNECTIONS FOR ALL CABLES EXCEPT TWISTED PAIR COMMUNICATIONS CABLE.

#### 1. Heat Shrink Splices

This splice shall be mechanically and electrically sound with bronze compression sleeve connection encapsulated in a permanent seal, waterproofing and insulating the electrical connection.

Wire ends must be thoroughly cleaned after the insulation is stripped off to ensure complete contact with another wire or the connector. If strands are damaged when the insulation is removed, the section of cable must be discarded. Nicked or damaged conductor strands will not be permitted inside of connectors. Loose wire ends shall not be used as "shims" to make a connection.

All connectors shall be designed for copper to copper connections. Only new connectors may be used. Connectors for compression sleeve splicing shall be of a type that when installed, the heat shrink products with proper mechanical and electrical properties may be utilized for all in-line splices of traffic signal control cable, loop feeder cable, traffic signal power supply cable, and other such applications.

The black heat shrink tubing shall be made of "thermally stabilized modified polyolefins" capable of minimum continuous use of 10,000 hours over an operating temperature range of -65 degrees to +130 degrees F.

The tubing shall be industry standard "thick wall type", and shall have the ability to conform to severe configuration changes without splitting. It shall have a 3:1 shrink ratio.

The tubing shall be supplied with a factory applied sealant. When heat is applied, the sealant inside the product softens and flows around and over any irregularly-shaped configurations, filling voids and completely water sealing. The sealant shall remain in a semi-flexible state, assuring a complete moisture seal.

Heat sources for the shrinking process can be an electric heat gun or propane/butane gas torch capable of delivering at least 250 degrees F. Scorched or burned splice components and/or sheathing will not be accepted.